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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/922,786	08/07/2001	Yasuo Gamo	010999	8872

38834 7590 01/23/2004

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EXAMINER

RICHARDS, N DREW

ART UNIT	PAPER NUMBER
2815	

DATE MAILED: 01/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/922,786	Applicant(s) GAMO ET AL.	
	Examiner N. Drew Richards	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 and 14-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-11, 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
 a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on 12/30/03. These drawings are acceptable.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Wang (U.S. Patent No. 6,188,101 B1).

Applicant's admitted prior art, hereafter referred to as "APA", teaches in figure 16D and on page 5 line 3 through page 6 line 11, a semiconductor device comprising:

a semiconductor substrate 101;

source and drain regions 104 formed in a surface layer of the substrate;

a multilayer film 106,111,112,113 formed on the substrate between the source and drain regions, the multilayer film being made up of at least three layers in which a first insulating film having a charge trap function is sandwiched by second and third insulating films from upper and lower sides;

a gate electrode 105 formed on the multilayer film;

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wherein the gate electrode extends between the source and drain over the substrate with the multilayer film interposed between the gate and the source and drain regions;

said source and drain regions contain impurities for conductivity; and

wherein the second insulating film as the lowermost layer of the multilayer film is formed thicker at portions above the source and drain regions than at other portions.

APA does not teach the source and drain containing a substance having an accelerated oxidation suppressing function. Wang et al. teach a gate over a substrate between a source and drain region. Wang teach a substance in the source and drain that has an accelerated oxidation suppression function. Wang teach nitrogen dopants added to the source and drain region to reduce lateral diffusion of dopant material in the channel region and reduce short channel effects.

APA and Wang are combinable because they are from the same field of endeavor. At the time of the invention it would have been obvious to a person of ordinary skill in the art to dope the source and drain regions with nitrogen. The motivation for doing so is to reduce short channel effects and allow the device dimensions to be smaller. Therefore, it would have been obvious to combine APA with Wang to obtain the invention of claim 9.

With regard to claim 10, the substance having an accelerated oxidation suppressing function is nitrogen.

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With regards to claim 11, the first insulating film of APA is a capacitive insulating film and the substrate and gate are capacitively coupled with each other so that the device functions as a memory.

With regard to claim 13, the thickness of the second insulating film above the source and drain falls within the range of 30-50 nm.

Response to Arguments

4. Applicant's arguments filed 7/15/03 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the "preconditions") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Thus, this argument is considered irrelevant to the patentability of the invention as claimed.


Conclusion

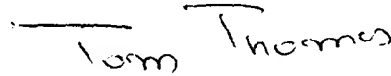
Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Drew Richards whose telephone number is (571) 272-1736. The examiner can normally be reached on M-F 8:00-5:30; Every other Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


NDR


Tom Thomas